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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,298	11/19/2001	William L. Bowden	08935-251001 / M-4971-Lam	8440

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EXAMINER
WEINER, LAURA S

ART UNIT	PAPER NUMBER
1745	7

DATE MAILED: 09/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/988,298	BOWDEN ET AL.	
	Examiner	Art Unit	
	Laura S Weiner	1745	

-- Th MAILING DATE of this communication appears on th cover sheet with the correspondenc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25* is/are pending in the application.

4a) Of the above claim(s) *11-25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-10, drawn to a primary lithium electrochemical cell, classified in class 429, subclass 224.

   II. Claims 11-23, 24-25, drawn to a method of preparing lambda-manganese dioxide and a method of manufacturing an electrochemical cell, classified in class 29, subclass 623.1.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process such as reacting Mn2O4 with an acid.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Mr. Fox on August 7, 2003, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-5 are rejected under 35 U.S.C. 102(a) as being anticipated by Read et al. "Low Temperature Performance of Lambda-Manganese Oxide in Lithium Primary Batteries".

Read et al. teaches a lithium primary battery comprising a lambda-manganese dioxide cathode and a lithium anode having a higher energy density than conventional heat-treated B/gamma-MnO2 in primary lithium batteries over the temperature range of –40 degrees C to 40 degrees C and discharge rates from 0.1 to 2.0 mA/cm2. The improvement resulted from the increased voltage and improved discharge kinetics on the 4V plateau of lambda-MnO2.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hunter (4,312,930).

Hunter teaches in column 6, lines 34-46, an electrochemical cell comprising a lithium anode, a cathode comprising lambda-manganese dioxide and an electrolyte. Hunter teaches in Figure 1, that the cell voltage starts at 4 V.

Since Hunter teaches the same lithium battery comprising a lambda-manganese dioxide positive electrode, a negative lithium electrode and an electrolyte then inherently the same lithium battery which contains an average closed circuit voltage of between

3.8 an 4.1V and a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm2 must also be obtained.

In addition, the presently claimed property of battery which contains an average closed circuit voltage of between 3.8 an 4.1V and a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm2 would have obviously have been present once the Hunter product is provided. *In re Best, 195 USPQ 433 (CCPA 1977).*

10. Claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Giwa et al. "Lithium Primary Envelope Cells".

Giwa et al. teaches a primary battery comprising a lambda-manganese dioxide cathode and a lithium anode. Giwa et al. teaches in the conclusion section that lambda-manganese dioxide gives higher energy than standard MnO2 as half its discharge occurs on a higher voltage plateau (3.9V) while the remainder of the discharge is around 2.8 V.

Since Giwa et al. teaches the same lithium primary battery comprising a lambda-manganese dioxide positive electrode and a negative lithium electrode then inherently the same lithium battery which contains a specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate of 1 mA/cm2 must also be obtained.

In addition, the presently claimed property of battery which contains specific discharge capacity to a 3V cutoff of greater than 130 mAh/g at a nominal discharge rate

of 1 mA/cm2 would have obviously have been present once the Giwa et al. product is provided. *In re Best, 195 USPQ 433 (CCPA 1977).*

11. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Read et al. "Low Temperature Performance of Lambda-Manganese Oxide in Lithium Primary Batteries" in view of Furukawa et al. (5,294,499).

Read et al. teaches a lithium primary battery comprising a lambda-manganese dioxide cathode and a lithium anode having a higher energy density than conventional heat-treated B/gamma-MnO2 in primary lithium batteries over the temperature range of –40 degrees C to 40 degrees C and discharge rates from 0.1 to 2.0 mA/cm2. The improvement resulted from the increased voltage and improved discharge kinetics on the 4V plateau of lambda-MnO2.

Read et al. discloses the claimed invention except for specifically teaching that the lambda-MnO2 is maintained at a temperature of less than 150 degrees C during processing and that the lambda-MnO2 has a BET surface area of greater than 8 m2/g.

Furukawa et al. teaches in column 4, lines 26-50, that it is known to have a MnO2 having a BET of 41.6 m2/g and the grain sizes is of 0.1 to 20 um.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a lambda-MnO2 having a BET surface area greater than 8 m2/g because Furukawa et al. teaches that this is known and since it has been held that

where general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller, 105 USPQ 233.*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S Weiner whose telephone number is 703-308-4396. The examiner can normally be reached on M-F (7:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 703-308-2383. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Laura S Weiner
Primary Examiner
Art Unit 1745

September 8, 2003